

Chile Writes a New Constitution

By Somini Sengupta (from NEW YORK TIMES, Dec. 28, 2021)

SALAR DE ATACAMA, Chile — Rarely does a country get a chance to lay out its ideals as a nation and write a new constitution for itself. Almost never does the climate and ecological crisis play a central role.

That is, until now, in Chile, where a national reinvention is underway. After months of protests over social and environmental grievances, 155 Chileans have been elected to write a new constitution amid what they have declared a “climate and ecological emergency.”

Their work will not only shape how this country of 19 million is governed. It will also determine the future of a soft, lustrous metal, lithium, lurking in the salt waters beneath this vast ethereal desert beside the Andes Mountains.

Lithium is an essential component of batteries. And as the global economy seeks alternatives to fossil fuels to slow down climate change, lithium demand — and prices — are soaring.

Mining companies in Chile, the world’s second-largest lithium producer after Australia, are keen to increase production, as are politicians who see mining as crucial to national prosperity. They face mounting opposition, though, from Chileans who argue that the country’s very economic model, based on extraction of natural resources, has exacted too high an environmental cost and failed to spread the benefits to all citizens, including its Indigenous people.

And so, it falls to the Constitutional Convention to decide what kind of country Chile wants to be. Convention members will decide many things, including: How should mining be regulated, and what voice should local communities have over mining? Should Chile retain a presidential system? Should nature have rights? How about future generations?

Around the world, nations face similar dilemmas — in the forests of central Africa, in Native American territories in the United States — as they try to tackle the climate crisis without repeating past mistakes. For Chile, the issue now stands to shape the national charter. “We have to assume that human activity causes damage, so how much damage do we want to cause?” said Cristina Dorador Ortiz,

a microbiologist who studies the salt flats and is in the Constitutional Convention. “What is enough damage to live well?”

Then there’s water. Amid a crippling drought supercharged by climate change, the Convention will decide who owns Chile’s water. It will also weigh something more basic: What exactly *is* water?

Chile’s current constitution was written in 1980, by people handpicked by its then military ruler, Augusto Pinochet. It opened the country to mining investments and allowed water rights to be bought and sold.

Chile prospered by exploiting its natural riches: copper and coal, salmon and avocados. But even as it became one of Latin America’s richest nations, frustrations mounted over inequality. Mineral-rich areas became known as “sacrifice zones” of environmental degradation. Rivers began drying up.

Anger boiled over into huge protests starting in 2019. A national referendum followed, electing a diverse panel to rewrite the constitution.

On Dec. 19 came another turning point. Voters elected Gabriel Boric, a 35-year-old former student activist, as president. He had campaigned to expand the social safety net, increase mining royalties and taxes, and create a national lithium company.

The morning after his victory, the stock price of the country’s biggest lithium producer, Sociedad Química y Minera de Chile, or SQM, fell 15 percent.

One fifth of the world’s lithium is produced by SQM, most of it in the Atacama Desert in northern Chile in the shadow of ancient volcanoes, including the oldest and still-active one, Lascar. The Lickanantay, the area’s Indigenous people, call Lascar the father of all volcanoes.

From above, the mine looks as though someone has spread a glistening blue and green quilt in the middle of this pale desert.

The riches lie in the brine underground. Day and night, SQM pumps out the brine, along with freshwater from five wells. Pipes carry brine to a series of ponds.

Then, the sun goes to work.

The Atacama has the [highest solar radiation](#) levels on Earth. Water evaporates astonishingly fast, leaving mineral deposits behind. Magnesium comes out of the ponds. Also potassium. Lithium remains in a viscous yellow green pool, which SQM converts into powdery white lithium carbonate for battery makers abroad.

SQM was a state-owned maker of fertilizer chemicals until Mr. Pinochet turned it over to his then son-in-law, [Julio Ponce Lerou](#), in 1983. More recently, it has been fined by Chile's stock market regulator and by the [U.S. Securities and Exchange Commission](#) over violations of the Foreign Corrupt Practices Act. Mr. Ponce, no longer chairman, retains 30 percent ownership

Today, SQM is riding a lithium bull market. Carlos Díaz, its vice president for lithium, said the company is seeking to increase capacity from 140,000 tons of lithium carbonate to 180,000 tons by 2022. Mr. Díaz said the firm wants to “produce lithium as green as possible,” including by reducing saltwater extraction by half by 2030 and by becoming “carbon neutral” by 2040.

There is good reason. Nearby, a copper mine, called Escondida, was [fined \\$93 million](#) for extracting water and causing what a Chilean court called “irreparable damage.”

The mining industry is bracing for change. A law to increase royalties is working through the legislature. And the Constitutional Convention is weighing provisions that could require more local decision-making.

Joaquin Villarino, president of the Mining Council, the industry lobby, said both could diminish Chile's appeal to investors. He voiced particular worry that some of the Convention members appeared to be against mining altogether, though he didn't name any. “I hope this is not what we will have in our Constitution,” he said, “because Chile is a mining country.”

The Convention is also likely to make water a public good. But another question will bear on the industry even more: Is brine — the saltwater beneath the desert — technically water? Mining companies assert it is not, because it is fit for neither human nor animal consumption.

“There is a clear separation between what is coming from the mountain, that is the continental water, and what you have in the brine in the Salar de Atacama,” Mr. Díaz said.

Brine extraction is currently governed by the mining code. The new constitution could change that. It could call brine water.

In the shadow of Lascar, not far from the SQM mine, shimmers a lagoon encrusted in bright, white salt. Jordán Jofré Lique, a geologist who works with the Atacama Indigenous Council, walks along its edge. A solitary flamingo crosses the salt crust.

The bird is looking for food, mainly brine shrimp, and this afternoon the lake is unusually dry. Mr. Lique, 28, isn't sure why. But it worries him. The health of the *salar* (salt flat in Spanish) constantly worries him, considering two major forces beyond his control: the warming of the planet and the mining industry's extraction of water here in one of the world's driest regions. The flamingo gives up its search, unfurls its pale pink wings and flies.

Mr. Lique, a Lickanantay man, knows the tracks of the salt flat. His grandfather herded sheep and goats here.

He was once set to go work for a mining company. It was a path to a good salary. Instead, he found himself studying the effects of mining on his people's land. "Maybe it was an act of God or life's circumstances," he said.

Some Indigenous people say mining companies have divided their communities with offers of money and jobs. Mr. Lique's organization is shunned by some people because it accepts research funds from Albemarle, an American company that also mines lithium locally.

His group has installed more than a dozen sensors to measure water levels, salinity and temperature. He is particularly worried about "the mixing zone," a sensitive ecosystem, where freshwater coexists with saltwater underground. The bright evaporation ponds act like mirrors, which Mr. Lique suspects heats the air.

Independent research has found [declining soil moisture](#) and ground cover in the salt flat, along with rising daytime temperatures, evidence of a strong correlation between the expansion of lithium mining and the drying of the area.

A government census has recorded a slight decline in the Andean flamingo population in the Atacama since 1997, whereas their numbers remain unchanged

elsewhere in Chile. Alejandra Castro, a park ranger in charge of flamingo reserves, suspects climate change.

SQM says its monitors show brine levels decreasing marginally in the mixing zone, and that the flora and fauna remain healthy.

The Atacama is full of surprises. Parts of it are so dry the ground is sharp and craggy, with no vegetation. Then the landscape changes suddenly, giving way to ankle-high shrubs, or a forest of towering tamarugo trees. A dirt road twists through the bare ochre hills, depositing you abruptly in a ravine carrying mountain spring water.

Mr. Lique sees the compounding effects of climate change. Water on his family's farm, near the mine, evaporates more quickly. Rains are more extreme. One alfalfa patch didn't grow this year. The corn is short.

But Mr. Lique is most worried about how the extraction of so much brine could change the delicate equilibrium of sun, earth and water, especially amid climate change. "The best scenario is that it doesn't get worse than this," he said. "The worst scenario is that everything dries up."

Dr. Dorador, the Constitutional Convention member, walks through a busy market in her hometown, Antofagasta. "The Constitution is the most important law in the country," she tells a man selling mangoes.

He listens politely.

Dr. Dorador, 41, describes what the assembly is discussing — water, housing, health care. She explains the timeline: a draft constitution by July, followed by a national vote.

Behind her, a man yells out the price of corn. Another is selling rabbits. One woman vents about shoulder pain. A few tell her they have no time.

Dr. Dorador became drawn to the microorganisms that have survived for millions of years in the salt flats. "We can learn a lot of things about climate change studying the *salares*, because they are already extreme," she said. "You can find clues of the past and also clues of the future."

Dr. Dorador is vying to be the convention's president. She wants the constitution to recognize that "humans are part of nature." She bristles when asked if lithium extraction is necessary to pivot away from fossil fuel extraction. Of course the world should stop burning oil and gas, she says, but not by ignoring yet unknown ecological costs. "Someone buys an electric car and feels very good because they're saving the planet," she says. "At the same time an entire ecosystem is damaged. It's a big paradox."

Indeed the questions facing this Convention aren't Chile's alone. The world faces the same reckoning as it confronts climate change and biodiversity loss, amid widening social inequities: Does the search for climate fixes require re-examining humanity's relationship to nature itself?

"We have to face some very complex 21st century problems," said Maisa Rojas, a climate scientist at the University of Chile. "Our institutions are, in many respects, not ready."